

## TO ASSESS SAFETY OF WITHHOLDING ANTITHROMBOTIC THERAPY IN PATIENTS WITH LOW OR INTERMEDIATE PROBABILITY OF PULMONARY EMBOLISM

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### Abstract

**Background & Method:** The study was carried out in the Department of Radio diagnosis, Index Medical College, Hospital & Research Centre, Indore, M.P. including 100 chronic bedridden patients with an aim to assess safety of withholding antithrombotic therapy in patients with low or intermediate probability of pulmonary embolism.

**Result:** Males represented about 62% of the entire sample. Majority of male patients were in age group 50 and above. Majority (29%) of female patients were of age group of 20 to 40 yrs. On the basis of B-mode sonography and colour Doppler 20% patients were diagnosed to have acute deep vein thrombosis and 12 % patients were diagnosed to have chronic deep vein thrombosis. Out of 100 chronic bedridden patients in the study, 40% were suspected to have deep vein thrombosis on the basis of clinical signs, 45% had a positive d-dimer test, 28% were positive on impedance plethysmography. 30% patients were diagnosed to have deep vein thrombosis by B mode sonography and 32% were diagnosed to have deep vein thrombosis by colour Doppler.

**Conclusion:** Only 32 patients were positive for deep vein thrombosis out of 100 patients so it is safe to withhold unnecessary anticoagulation therapy in all chronic bed ridden patients because even after 3 month follow up only 1% patients were positive. Impedence plethysmography is less sensitive than ultrasonography and D-dimer test is more sensitive but it lacks specificity so ultrasound and colour Doppler is more sensitive in clinically suspected DVT patients. Ultrasonography and colour Doppler is better predictor of DVT because it is more sensitive and specific, non-invasive, painless, widely available, easy to use, less expensive, no ionizing radiation.

**Keywords:** antithrombotic, pulmonary & embolism.

### Introduction

Ultrasound uses the impressions of sound waves to assess delicate tissue structures. Constant imaging has worked on the utilization of ultrasound with dynamic pictures that are seen instantaneously [1]. Two methods of ultrasound are utilized in the assessment of DVT: B-mode and duplex ultrasound. B-mode (splendor regulation) imaging uses constant imaging joined with a straight exhibit of transmission shafts to deliver a two dimensional picture. This empowers the perception of venous life structures without the utilization of difference media [2].

The proximal DVT rate for these patients is  $> \text{ or } = 15\%$ , and the deadly PE rate is  $> \text{ or } = 1\%$ . Hazard factors related with venous thrombo-embolism are identified with the vascular injury, enactment of blood coagulation, and venous balance. Lower limit muscular systems convey a danger more noteworthy than that of medical procedure itself. Consequently, muscular patients are at high danger for venous thrombo-embolic conditions. An orderly appraisal of this danger ought to be acted in each tolerant, and a suitable administration plan ought to be implemented [3].

Different investigations have been accomplished for surveying intense calf profound venous apoplexy. At the point when intense DVT is thought, one or both lower limits are assessed. An inquiry explicitly for separated calf DVT isn't by and large attempted since the proximal lower limit is additionally assessed in the setting of suspected calf DVT. Be that as it may, it is valuable to examine the affectability and explicitness of US for calf DVT since this substance is either treated or followed with sequential noninvasive studies [4]. Difference venography has been viewed as the most reliable analytic test for intense calf DVT. Similar to the case with IPG, US can't be depended on to avoid calf vein apoplexy. As indicated above, sequential US (or IPG) is fitting in patients with manifestations of intense DVT and a negative introductory review, and a portion of these patients might have undetected calf DVT, which can be evaluated (for conceivable augmentation) at follow-up. In the event that, in a specific patient with suspected DVT, the underlying US (or IPG) is negative and circle back to sequential examinations can't be ensured, then, at that point, CV would be suitable. Ultrasonography is explicit for indicative intense calf vein DVT, and a positive test in this setting can as a rule be depended on [5].

## Material & Method

The study was carried out from June 2018 – July 2019 in the Department of Radio diagnosis, Index Medical College, Hospital & Research Centre, Indore, M.P. including 100 chronic bedridden patients. The study was carried out by USG machine of Toshiba (Just vision 400) & Schimadzu (SDU - 2200) by using linear transducer of 7.5 MHz – 10MHz.

Clear visualization of lower extremity veins requires adequate distention of venous system. To this end the lower extremity must be dependent which may be accomplished by steeply elevating the head of the examination table or by

examining the patient in the sitting position. The patient in examining room should be sufficiently warm to prevent vasoconstriction, which results in poor venous distention.

### Inclusion Criteria:

1. All patients having traumatic limb problems (like fracture, soft tissue & vascular injury).
2. Undergone major operation of lower limb.
3. Stroke, malignancy, renal dialysis patients, congestive heart failure, etc.

### Results

**Table 1: Distribution of cases according to gender**

The cases were distributed on basis of gender.

Age Group	Males	% of Males	Females	% of Females
20-30yrs	6	6%	12	12%
30-40yrs	4	4%	17	17%
40-50yrs	9	9%	4	4%
50-60yrs	24	24%	4	4%
>60yrs	19	19%	1	1%
TOTAL	62		38	

Males represented about 62% of the entire sample. Majority of male patients were in age group 50 and above. Majority (29%) of female patients were of age group of 20 to 40 yrs.

**Table 2: Distribution according to acute and chronic deep vein thrombosis**

The patients were distributed on the basis of acute and chronic deep vein thrombosis.

S.NO.	Diagnosis	No. of Patients	%
1	Acute	20	20%
2	Chronic	12	12%

On the basis of B-mode sonography and colour Doppler 20% patients were diagnosed to have acute deep vein thrombosis and 12 % patients were diagnosed to have chronic deep vein thrombosis.

**Table 3: Clinical correlation with ultrasonographic findings and other tests**

The patients were distributed on the basis of clinical correlation with ultrasonographic findings and other tests.

S.no.	Test	No of positive patients	%
1	Clinical	40	40%
2	D-dimer test	45	45%
3	Impedence plethysmography	28	28%
4	B mode USG	30	30%
5	Colour Doppler	32	32%

Out of 100 chronic bedridden patients in the study, 40% were suspected to have deep vein thrombosis on the basis of clinical signs, 45% had a positive d-dimer test, 28% were positive on impedance plethysmography. 30% patients were diagnosed to have deep vein thrombosis by B mode sonography and 32% were diagnosed to have deep vein thrombosis by colour Doppler.

## Discussion

Reflux on valsalva was present in 11% patients and absent in 69% patients, 20% patients had thrombus and had no resting flow. So on colour Doppler study there were 32 patients were positive for deep vein thrombosis. On comparing this with previous published literature by Wells et al it was shown that, colour Doppler is more sensitive and have advantage over B-mode USG because Doppler component facilitates localization of vessels [6].

Out of 100 chronic bed ridden patients, 32 patients had DVT so the incidence of deep vein thrombosis of lower limb in chronic bedridden patients by ultrasonography and colour Doppler was 32%. On comparing this with published literature by Paiement et al in which incidence rate 40%, it can be concluded that in our set up incidence rate is slightly higher due to large cases of road traffic accident, delayed and lack of administration of anticoagulant therapy in clinically

suspected positive patients and lack of awareness of physiotherapy[7].

By B-mode USG and colour Doppler study was concluded that acute deep vein thrombosis was present in 20 patients and chronic deep vein thrombosis was present in 12 patients. So there were more number of patients (20) of acute deep vein thrombosis and are more prone for pulmonary embolism, so it is necessary to give anticoagulant as early as possible in these patients [8].

On correlation of clinical findings with B-mode and colour Doppler it was found that D-dimer test is more sensitive and less specific and IPG is less sensitive in comparison to ultrasonography and colour Doppler[9]. So B-mode sonography and colour Doppler is more accurate to diagnose deep vein thrombosis.

### Conclusion

Only 32 patients were positive for deep vein thrombosis out of 100 patients so it is safe to withhold unnecessary anticoagulation therapy in all chronic bed ridden patients because even after 3 month follow up only 1% patients were positive. Impedence plethysmography is less sensitive than ultrasonography and D-dimer test is more sensitive but it lacks specificity so ultrasound and colour Doppler is more sensitive in clinically suspected DVT patients. Ultrasonography and colour Doppler is better predictor of DVT because it is more sensitive and specific, non-invasive, painless, widely available, easy to use, less expensive, no ionizing radiation.

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